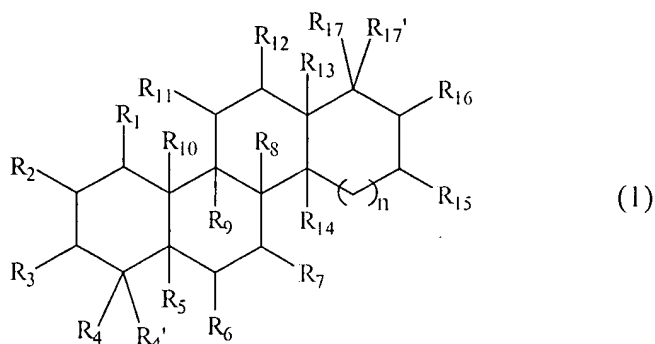


In the claims:

Please amend the claims as follows:

1. (currently amended) A compound of formula (1):



wherein

each of R_1 , R_2 , R_7 , R_{11} , R_{12} , R_{15} , and R_{16} , independently, is hydrogen, hydroxy, amino, carboxyl, oxo, halo, sulfonic acid, -O-sulfonic acid, or alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid;

R_4 is hydrogen, hydroxy, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid; or R_4 together with $R_{4'}$ is oxo;

$R_{4'}$ is hydrogen, hydroxy, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-,

and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid; or R₄ together with R₄ is oxo;

each of R₁₇, and R₁₇, independently, is hydrogen, hydroxy, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, or alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid;

R₃ is X-Y-, wherein X is hydrogen, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, or alkyl; Y is -S-, -NH-, -N(alkyl)-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-;

R₅ and R₆, together, are -O-; or R₅ and R₆, together, are a double bond between C-5 and C-6, and R₇ is oxo;

each of R₈, R₉, R₁₀, R₁₃, and R₁₄, independently, is hydrogen, alkyl, haloalkyl, hydroxyalkyl, alkoxy, hydroxy, or amino; and

n is 0, 1, or 2; and provided that when R¹, R², R⁴, R^{4'}, R⁸, R⁹, R¹¹, R¹², R¹⁴, R¹⁵, R¹⁶, and R¹⁷ are hydrogen; R¹⁰ and R¹³ are CH₃; R⁵ and R⁶ together are a double bond between C-5 and C-6; R⁷ is hydrogen or oxo; R¹⁷ is CH₃CH(CH₂)₃CH(CH₃)₂; and n is 0, then R³ is (CH₃CH₂)₃HN⁽⁺⁾⁽⁻⁾OSO₂O- or X-Y- wherein X is hydrogen, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, or alkyl; Y is -S-, -NH-, -N(alkyl)-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -CO-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-.

2. (Original) The compound of claim 1, wherein X is hydrogen or amino, and Y is -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-.

3. (Withdrawn)

4. (Withdrawn)

5. (Withdrawn)

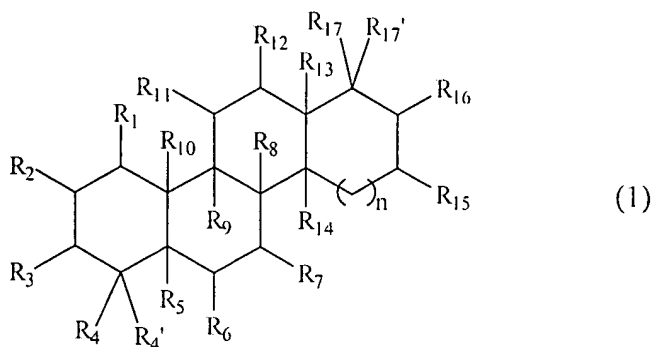
6. (Withdrawn)

7. (Withdrawn)

8. (Withdrawn)

9. (Withdrawn)

10. (Withdrawn)
11. (Withdrawn)
12. (Original) The compound of claim 1, wherein R_5 and R_6 , together, are a double bond between C-5 and C-6, and R_7 is oxo.
13. (Original) The compound of claim 12, wherein X is hydrogen or amino, and Y is -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-.
14. (Original) The compound of claim 13, wherein X is hydrogen, and Y is -SO₃-O-.
15. (Original) The compound of claim 14, wherein R_1 , R_2 , R_4 , R_4' , R_7 , R_8 , R_9 , R_{11} , R_{12} , R_{14} , R_{15} , R_{16} , and R_{17} are hydrogen; and each of R_{10} , R_{13} , and R_{17} , independently, is alkyl.
16. (Cancelled) The compound of claim 15, wherein the compound is 7-keto-cholesterol-3-sulfate.
17. (Withdrawn)
18. (Withdrawn)
19. (Withdrawn)
20. (Withdrawn)
21. (Withdrawn)
22. (Withdrawn)
23. (Withdrawn)
24. (Withdrawn)
25. (Withdrawn)
26. (Withdrawn)
27. (Withdrawn)
28. (Withdrawn)
29. (Withdrawn)
30. (Withdrawn)
31. (Withdrawn)
32. (Withdrawn)
33. (Currently amended) A pharmaceutical composition comprising a compound of formula (1):



wherein:

each of R_1 , R_2 , R_7 , R_{11} , R_{12} , R_{15} , and R_{16} , independently, is hydrogen, hydroxy, amino, carboxyl, oxo, halo, sulfonic acid, -O-sulfonic acid, or alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid;

R_4 is hydrogen, hydroxy, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid; or R_4 together with $R_{4'}$ is oxo;

$R_{4'}$ is hydrogen, hydroxy, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid; or $R_{4'}$ together with R_4 is oxo;

each of R_{17} , and $R_{17'}$, independently, is hydrogen, hydroxy, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, or alkyl that is optionally inserted with -NH-, -N(alkyl)-, -O-, -S-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-, and further optionally substituted with hydroxy, halo, amino, carboxyl, sulfonic acid, or -O-sulfonic acid;

R₃ is X-Y-, wherein X is hydrogen, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, or alkyl; Y is -S-, -NH-, -N(alkyl)-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-;

R₅ and R₆, together, are -O-; or R₅ and R₆, together, are a double bond between C-5 and C-6, and R₇ is oxo;

each of R₈, R₉, R₁₀, R₁₃, and R₁₄, independently, is hydrogen, alkyl, haloalkyl, hydroxyalkyl, alkoxy, hydroxy, or amino; and

n is 0, 1, or 2; provided that when R¹, R², R⁴, R^{4'}, R⁸, R⁹, R¹¹, R¹², R¹⁴, R¹⁵, R¹⁶, and R¹⁷ are hydrogen; R¹⁰ and R¹³ are CH₃; R⁵ and R⁶ together are a double bond between C-5 and C-6; R⁷ is hydrogen or oxo; R¹⁷ is CH₃CH(CH₂)₃CH(CH₃)₂; and n is 0, then R³ is (CH₃CH₂)₃HN⁽⁺⁾ (-OSO₂O- or X-Y- wherein X is hydrogen, amino, carboxyl, halo, sulfonic acid, -O-sulfonic acid, or alkyl; Y is -S-, -NH-, -N(alkyl)-, -SO-, -SO₂-, -O-SO₂-, -SO₂-O-, -CO-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-;

and a pharmaceutically acceptable carrier.

34. (Original) The composition of claim 33, wherein X is hydrogen or amino, and Y is -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-.

35. (Withdrawn)

36. (Withdrawn)

37. (Withdrawn)

38. (Withdrawn)

39. (Withdrawn)

40. (Withdrawn)

41. (Withdrawn)

42. (Withdrawn)

43. (Original) The composition of claim 33, wherein R₅ and R₆, together, are a double bond between C-5 and C-6, and R₇ is oxo.

44. (Original) The composition of claim 33, wherein X is hydrogen or amino, and Y is -O-SO₂-, -SO₂-O-, -SO₃-O-, -CO-, -CO-O-, -O-CO-, -CO-NH-, -CO-N(alkyl)-, -NH-CO-, or -N(alkyl)-CO-.

45. (Original) The composition of claim 44, wherein X is hydrogen, and Y is $-\text{SO}_3-\text{O}-$.
46. (Original) The composition of claim 45, wherein $\text{R}_1, \text{R}_2, \text{R}_4, \text{R}_4', \text{R}_7, \text{R}_8, \text{R}_9, \text{R}_{11}, \text{R}_{12}, \text{R}_{14}, \text{R}_{15}, \text{R}_{16}$, and R_{17} are hydrogen, and each of $\text{R}_{10}, \text{R}_{13}$, and R_{17}' , independently, is alkyl.
47. (Cancelled) The composition of claim 46, wherein the compound is 7-keto-cholesterol-3-sulfate.
48. (Withdrawn)
49. (Withdrawn)
50. (Withdrawn)
51. (Withdrawn)
52. (Withdrawn)
53. (Withdrawn)
54. (Withdrawn)
55. (Withdrawn)
56. (Withdrawn)
57. (Withdrawn)
58. (Withdrawn)
59. (Withdrawn)
60. (Withdrawn)
61. (Withdrawn)
62. (Withdrawn)
-